

## SOLAR OBSERVATIONS

SOLAR AND SKY RADIATION MEASUREMENTS DURING  
MAY, 1926

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For a description of instruments and exposures and an account of the method of obtaining and reducing the measurements, the reader is referred to the REVIEW for January, 1924, 52 : 42, January, 1925, 53 : 29, and July, 1925, 53 : 318.

From Table 1 it is seen that solar radiation intensities averaged slightly above the normal for May at Washington and below the normal at Madison and Lincoln.

At Madison a mid-day intensity of 1.48 gr. cal./min./cm<sup>2</sup> on the 12th approximates closely to the extreme intensity for May of 1.49 recorded on May 9, 1923.

Table 2 shows an excess in the amount of the radiation received on a horizontal surface from the sun and sky at all three stations, which is most pronounced at Washington.

Skylight polarization measurements made on seven days at Washington give a mean of 60 per cent, with a maximum of 65 per cent on the 27th and 29th. These are higher than the corresponding averages for May at Washington. Measurements made on five days at Madison give a mean of 53 per cent, with a maximum of 63 per cent on the 11th. These are below the corresponding averages for May at Madison.

TABLE 1.—Solar radiation intensities during May, 1926

[Gram-calories per minute per square centimeter of normal surface]

## WASHINGTON, D. C.

Date		Sun's zenith distance										Local mean solar time	
		8 a.m.	78.7°	75.7°	70.7°	60.0°	0.0°	60.0°	70.7°	75.7°	78.7°		Noon
		75th mer. time	Air mass										
			A. M.					P. M.					
		e.	5.0	4.0	3.0	2.0	* 1.0	2.0	3.0	4.0	5.0	e.	
May	1	<i>mm.</i>	<i>cal.</i>	<i>cal.</i>	<i>cal.</i>	<i>cal.</i>	<i>cal.</i>	<i>cal.</i>	<i>cal.</i>	<i>cal.</i>	<i>cal.</i>	<i>mm.</i>	
	4	8.48				0.89						9.47	
	5	3.99	0.64	0.77	0.91	1.18	1.40	1.06	0.94			3.99	
	7	2.74	0.75	0.84	0.92	1.19		1.00				2.87	
	8	9.83		0.50			1.10					9.14	
	11	7.57	0.49	0.60	0.75	0.94						7.04	
	17	5.36		0.81	0.98	1.19	1.40	1.04	0.80	0.67	0.56	3.81	
	18	7.87		0.74	0.81	0.96	1.16					7.21	
	19	10.97					1.27					10.21	
	24	14.10	0.65	0.76	0.87	0.92						14.60	
	25	6.27						1.00	0.85			7.87	
	26	8.18					1.27	0.92				4.75	
27	6.02					1.28					5.56		
28	6.27			0.85	1.00	1.38					6.27		
29	7.87		0.60	0.75	0.99	1.29					5.16		
Means			0.63	0.72	0.86	1.03	1.28	1.00	0.86	(0.67)	(0.56)		
Departures			±0.00	+0.01	+0.05	+0.05	±0.00	+0.02	+0.07	-0.02	-0.04		

\* Extrapolated.

TABLE 1.—Solar radiation intensities during May, 1926—Contd.  
MADISON, WIS.

Date		Sun's zenith distance										Local mean solar time	
		8 a.m.	78.7°	75.7°	70.7°	60.0°	0.0°	60.0°	70.7°	75.7°	78.7°		Noon
		75th mer. time	Air mass										
			A. M.						P. M.				
		e.	5.0	4.0	3.0	2.0	* 1.0	2.0	3.0	4.0	5.0	e.	
		<i>mm.</i>	<i>cal.</i>	<i>cal.</i>	<i>cal.</i>	<i>cal.</i>	<i>cal.</i>	<i>cal.</i>	<i>cal.</i>	<i>cal.</i>	<i>cal.</i>	<i>mm.</i>	
May	1	5.56			0.69	0.91	1.29					6.76	
	5	6.02					1.33					9.83	
	6	6.50				1.03	1.33					6.02	
	10	4.75					1.38					5.79	
	11	5.16			1.09	1.24						6.27	
	12	5.56					1.54					5.79	
	15	4.75					1.34					5.74	
	17	7.29				1.10	1.28					7.57	
	20	7.04					1.22					6.76	
	22	5.16					1.24					5.36	
	27	6.27					1.39					6.76	
	28	7.57				1.03	1.32					8.18	
Means.....					(0.89)	1.06	1.33						
Departures.....					-0.06	-0.05	-0.02						

## LINCOLN, NEBR.

May 3.....	4.57	-----	-----	0.69	0.88	1.21	-----	-----	-----	-----	5.56
4.....	7.04	-----	-----	-----	1.10	1.24	0.95	0.78	0.64	0.53	6.27
5.....	9.47	-----	0.76	-----	1.17	-----	-----	-----	-----	-----	10.21
14.....	5.56	0.70	0.88	0.92	1.17	-----	-----	-----	-----	-----	3.15
15.....	4.57	-----	0.91	1.00	1.22	1.47	1.18	1.03	0.90	-----	4.37
19.....	8.18	-----	0.42	0.54	0.77	-----	0.95	0.75	0.68	-----	6.27
24.....	13.13	-----	-----	0.91	1.07	1.28	-----	-----	-----	-----	13.13
Means.....	-----	(0.70)	0.74	0.81	1.04	1.30	1.03	0.85	0.74	(0.53)	-----
Departures.....	-----	-0.01	-0.06	-0.14	-0.09	-0.08	-0.07	-0.07	-0.04	-0.19	-----

\* Extrapolated.

TABLE 2.—Solar and sky radiation received on a horizontal surface  
[Gram-calories per square centimeter of horizontal surface]

Week beginning—	Average daily radiation					Average daily departure from normal		
	Washington	Madison	Lincoln	Chicago	New York	Washington	Madison	Lincoln
Apr. 30.....	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.
May 7.....	498	506	581	433	438	+49	+60	+109
14.....	552	494	318	423	481	+92	+33	-173
21.....	489	465	591	383	350	+21	-10	+81
28.....	568	534	630	329	500	+90	+57	+121
Excess since first of year on June 3.....	532	537	564	461	385	+44	+54	+41
Excess since first of year on June 3.....	-----					+2,765	+2,758	+574

## CORRECTION TO TABLE 2 FOR JANUARY AND FEBRUARY, 1926

Owing to a misunderstanding the sensitivity of the recorder in use at Chicago was changed while undergoing repairs in December, 1925. In consequence the daily average for each week for that station published in the Monthly Weather Review for January and February, 1926, should be multiplied by 1.75.